IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A device for detecting a tilt angle of an optical recording medium recording/reproducing device provided with an optical system that guides a laser beam irradiated from a light source onto a recording surface of an optical recording medium, and receives at a light receiving portion the laser beam reflected by the recording surface of the optical recording medium, comprising:

a photodetector provided at the light receiving portion, which has a light receiving surface divided into at least four segments along a track tangent direction of the optical recording medium and a direction that is perpendicular thereto, and which outputs light reception signals corresponding to an intensity of a laser beam received at the four segments of light receiving surface;

a first push-pull signal generator which generates, as a first push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of one side of the four light receiving surfaces, which are divided in the track tangent direction;

a second push-pull signal generator which generates, as a second push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of the other side of the four light receiving surfaces, which are divided in the track tangent direction; and

a tilt signal generator which generates a tilt signal that indicates a tilt angle defined by a normal on the recording surface of said optical recording medium at a position of irradiation of

the laser beam and the optical axis of the laser beam in accordance to a difference between an amplitude of the first push-pull signal and an amplitude of the second push-pull signal,

wherein said tilt signal generator includes:

a pattern identifying device which identifies whether or not a track pattern at a center position in which the laser beam is irradiated on the recording surface of said optical recording medium is a predetermined pattern; and

a switching element which turns on to relay the tilt signal when the predetermined pattern is identified by said pattern identifying device.

Claim 2 (Original): The tilt angle detection device according to claim 1, wherein said tilt signal generator includes:

a first PP value detection circuit for detecting a P-P (peak-to-peak) value of the first push-pull signal;

a second PP value detection circuit for detecting a P-P value of the second push-pull signal; and

a subtracter for subtracting the PP value detected by the second PP value detection circuit from the PP value detected by said first PP value detection circuit to generate the tilt signal.

Claim 3 (Original): The tilt angle detection device according to claim 1, wherein said tilt signal generator has an averaging circuit for averaging a level of at least one of the push-pull signal and the tilt signal.

Claim 4 (Original): The tilt angle detection device according to claim 2,

wherein said tilt signal generator has an automatic gain control circuit; and

wherein said automatic gain control circuit is arranged at one of an input line of each of said first PP value detection circuit and said second PP value detection circuit, each connection line between said first PP value detection circuit and said subtracter and between said second PP value detection circuit and said subtracter, and an output line of said subtracter.

Claim 5 (Cancelled)

Claim 6 (Currently Amended): The tilt angle detection device according to claim [[5]] 1, wherein the predetermined pattern is a mirror surface portion.

Claim 7 (Currently Amended): ~~The tilt angle detection device according to claim 1~~ A device for detecting a tilt angle of an optical recording medium recording/reproducing device provided with an optical system that guides a laser beam irradiated from a light source onto a recording surface of an optical recording medium, and receives at a light receiving portion the laser beam reflected by the recording surface of the optical recording medium, comprising:

a photodetector provided at the light receiving portion, which has a light receiving surface divided into at least four segments along a track tangent direction of the optical recording medium and a direction that is perpendicular thereto, and which outputs light reception signals corresponding to an intensity of a laser beam received at the four segments of light receiving surface;

a first push-pull signal generator which generates, as a first push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving

surfaces of one side of the four light receiving surfaces, which are divided in the track tangent direction;

a second push-pull signal generator which generates, as a second push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of the other side of the four light receiving surfaces, which are divided in the track tangent direction; and

a tilt signal generator which generates a tilt signal that indicates a tilt angle defined by a normal on the recording surface of said optical recording medium at a position of irradiation of the laser beam and the optical axis of the laser beam in accordance to a difference between an amplitude of the first push-pull signal and an amplitude of the second push-pull signal,

wherein said tilt signal generator includes:

a pattern identifying device which identifies a track pattern at a center position in which the laser beam is irradiated on the recording surface of said optical recording medium; and

an arithmetic device which calculates a final tilt signal in response to a plurality of tilt signals when patterns of a plurality of predetermined areas are individually identified by said pattern identifying device.

Claim 8 (Original): The tilt angle detection device according to claim 7, comprising:

a holding device which holds the tilt signals when a pattern that indicates the predetermined area is identified by said pattern identifying device.

Claim 9 (Original): The tilt angle detection device according to claim 7, wherein said arithmetic device includes:

a multiplication device which multiplies a coefficient to the tilt signal for each tilt signal when a pattern of each of the plurality of predetermined areas is identified by said pattern identifying device; and

an adder which adds the multiplication results of said multiplication device to calculate the final tilt signal.

Claim 10 (Original): The tilt angle detection device according to claim 9, wherein said arithmetic device has a storage element in which the coefficient is stored for each of the plurality of predetermined areas.

Claim 11 (Original): The tilt angle detection device according to claim 10, wherein said storage element has an optical recording medium on which the coefficient for each of the plurality of predetermined areas is recorded as a data table.

Claim 12 (Currently Amended): A tilt angle detection method of an optical recording medium recording/reproducing device provided with an optical system that guides a laser beam irradiated from a light source onto a recording surface of an optical recording medium, and receives at a light receiving portion the laser beam reflected by the recording surface of said optical recording medium, comprising steps of:

the light receiving portion having a light receiving surface divided into at least four segments along a track tangent direction of the optical recording medium and a direction that is perpendicular thereto, outputting light reception signals corresponding to an intensity of a laser beam received at each of the four segments of light receiving surface;

generating, as a first push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of one side of the four light receiving surfaces, which are divided in the track tangent direction;

generating, as a second push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of the other side of the four light receiving surfaces, which are divided in the track tangent direction; and

generating a tilt signal that indicates a tilt angle defined by a normal on the recording surface of said optical recording medium at a position of irradiation of the laser beam and the optical axis of the laser beam in accordance to a difference between an amplitude of the first push-pull signal and an amplitude of the second push-pull signal;

identifying whether or not a track pattern at a center position in which the laser beam is irradiated on the recording surface of said optical recording medium is a predetermined pattern; and

relaying the tilt signal by turning on a switching element when the predetermined pattern is identified in the pattern identifying step.

Claim 13 (Cancelled)

Claim 14 (New): A tilt angle detection method of an optical recording medium recording/reproducing device provided with an optical system that guides a laser beam irradiated from a light source onto a recording surface of an optical recording medium, and receives at a light receiving portion the laser beam reflected by the recording surface of said optical recording medium, comprising steps of:

the light receiving portion having a light receiving surface divided into at least four segments along a track tangent direction of the optical recording medium and a direction that is perpendicular thereto, outputting light reception signals corresponding to an intensity of a laser beam received at each of the four segments of light receiving surface;

generating, as a first push-pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of one side of the four light receiving surfaces, which are divided in the track tangent direction;

generating, as a second push pull signal, a difference between the light reception signals of said photodetector corresponding to two light receiving surfaces of the other side of the four light receiving surfaces, which are divided in the track tangent direction;

generating a tilt signal that indicates a tilt angle defined by a normal on the recording surface of said optical recording medium at a position of irradiation of the laser beam and the optical axis of the laser beam in accordance to a difference between an amplitude of the first push-pull signal and an amplitude of the second push-pull signal;

identifying a track pattern at a center position in which the laser beam is irradiated on the recording surface of said optical recording medium; and

calculating a final tilt signal in response to a plurality of tilt signals when patterns of a plurality of predetermined areas are individually identified in the pattern identifying step.